

Alg. 2 Warm Up # 4-1

Solve:

1) $x^2 - 8x + 7 > 0$

2) $\frac{2}{5}|4x - 8| + 16 \geq 58$

Homework questions:

Alg 2B Ch. 5 Rev. #1

Name _____

Team _____ Per _____

Factor completely:

1) $x^2 + 4x - 12$

2) $4x^2 - 1$

3) $5x^2 + 35x + 60$

4) $16x^2 - 12x$

$4x(4x - 3)$

5) $3x^2 - 12$

$3(x^2 - 4)$

$3(x + 2)(x - 2)$

6) $8x^2 + 20x - 12$

$4(2x^2 + 5x - 3)$

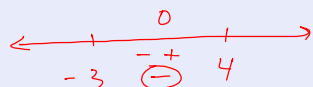
$4(2x - 1)(x + 3)$

$$\begin{array}{r} 6x \\ - 1x \\ \hline 5x \end{array}$$

Solve. Support answers with correct process.

7) $x^2 - x - 12 \leq 0$ 8) $|3x - 1| > 2$ 9) $2|x - 6| - 10 \leq 62$

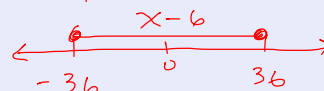
$(x - 4)(x + 3) \leq 0$



$-3 \leq x \leq 4$

$2|x - 6| \leq 72$

$|x - 6| \leq 36$

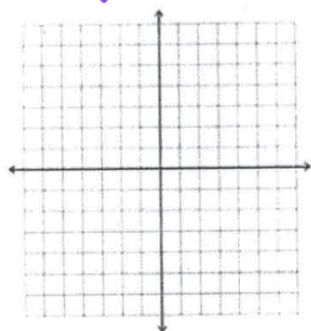


$-36 \leq x - 6 \leq 36$

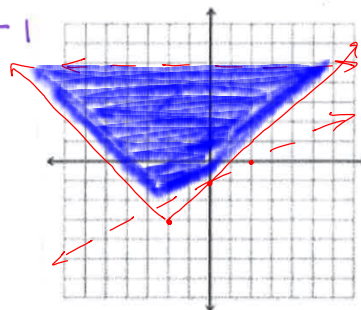
$-30 \leq x \leq 42$

Accurately graph the solution to the system.

10) $y < x^2 + 2$
 $y \leq -(x - 2)^2 + 6$



11) $y \geq |x + 2| - 3$
 $y < 5$
 $y > \frac{1}{2}x^2 - 1$



12) Describe the transformations of the parent graph to:

a) $y = 2\sqrt[3]{x-5}$

b) $y = \frac{1}{4}|x+2|-6$

- left 2
- Vertical compression of $\frac{1}{4}$
- Down 6

Simplify the expressions

13) $\frac{6ab^{-4}}{24(ab)^{-2}}$

$$\frac{a^1(ab)^2}{4b^4}$$

$$\frac{a^1a^2b^2}{4b^4}$$

$$\frac{a^3}{4b^2}$$

14) $\frac{5x^1y^3}{6x^{-1}} \cdot \frac{3y^{-4}}{x^2}$

$$\frac{5x^8y^3}{6} \cdot \frac{3}{x^2y^4}$$

$$\frac{15x^8y^3}{6x^2y^4}$$

$$\frac{5x^6}{2y}$$

15) $\frac{3x}{(2y)^{-2}} \div \frac{6x^{-7}}{10xy}$

$$\frac{3x(2y)^2}{1} \cdot \frac{10xy}{6x^{-7}}$$

$$20x^9y^3$$

Change to exponent form:

16) $\log_6 36 = 2$

17) $\log_x 5 = y$

18) $\log_3 (x+5) = 14$

Change to log form:

19) $7^x = t$

20) $5^{(x-2)} = 4y$

$\log_x (y+2) = 12$

21) $x^{12} = (y+2)$

$\log_5 4y = x-2$

22) Find the inverse. State domain & range for both.

a) $y = \sqrt{x-2} + 7$

orig

d: $x \leq 1$

r: $y \geq 2$

inverse

d: $x \geq 2$

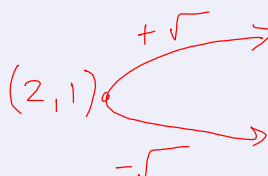
r: $y \leq 1$

b) $y = (x-1)^2 + 2$; $x \leq 1$

$x = (y-1)^2 + 2$
 $\pm \sqrt{x-2} = \sqrt{(y-1)^2}$

$\pm \sqrt{x-2} = y - 1$

$y = \left(\begin{smallmatrix} + \\ - \end{smallmatrix} \right) \sqrt{x-2} + 1$



$y = -\sqrt{x-2} + 1$

Practice with Compositions:

$f(x) = 4x + 5$

$g(x) = (x - 3)^2 + 1$

$f(g(2)) = 4(g(2)) + 5$

$= 4((2-3)^2 + 1) + 5$

$= 4((-1)^2 + 1) + 5$

$= 4(2) + 5$

$= 13$

$g(f(-3)) = (f(-3) - 3)^2 + 1$

$= (4(-3) + 5 - 3)^2 + 1$

$= (-12 + 2)^2 + 1$

$= 101$

Practice with Compositions:

$$f(x) = 4x + 5 \quad g(x) = (x - 3)^2 + 1$$

$$f(g(2)) =$$

$$g(f(-3)) =$$

$$\begin{aligned} f(g(x)) &= 4(g(x)) + 5 \\ &= 4((x-3)^2 + 1) + 5 \\ &= 4(x^2 - 6x + 9 + 1) + 5 \\ &= 4(x^2 - 6x + 10) + 5 \\ &= 4x^2 - 24x + 40 + 5 \\ f(g(x)) &= 4x^2 - 24x + 45 \end{aligned}$$

Alg 2B Compositions and Chapter 5 Review #2

Name _____

Per. _____

Team _____

$$f(x) = \sqrt{7-x} - 6$$

$$g(x) = -(x+6)^2 + 7$$

1. find $f(g(-5))$

$$-5$$

2. find $g(f(3))$

$$3$$

3. find $f(g(-10))$

$$-2$$

4. find $f(g(x))$

$$= \sqrt{7 - (g(x))} - 6$$

$$= \sqrt{7 - [-(x+6)^2 + 7]} - 6$$

$$= \sqrt{7 + (x+6)^2 - 7} - 6$$

$$= \sqrt{(x+6)^2} - 6$$

$$= x + 6 - 6$$

$$x$$

5. find $g(f(x))$

$$= -(f(x) + 6)^2 + 7$$

$$= -(\sqrt{7-x} - 6 + 6)^2 + 7$$

$$= -(\sqrt{7-x})^2 + 7$$

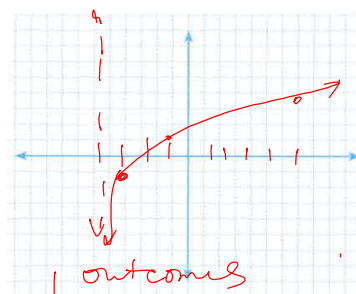
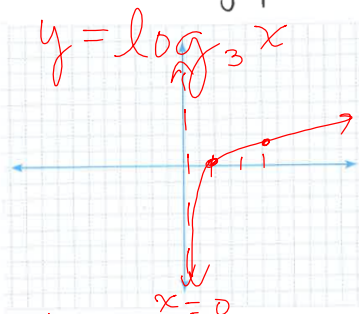
$$= -(7-x) + 7$$

$$= -7 + x + 7$$

$$x$$

6. What do the results of 4 & 5 tell you about $f(x)$ & $g(x)$?

7. Accurately graph the parent, then describe the transformations and graph $y = 2 \log_3(x+4) - 1$. label asymptotes with their equation.



$3^y = x$

x	y
1	0
3	1
9	2

$x \rightarrow \text{left } 4$

outcomes

	times 2, -1
-3	-1
-1	1
5	3

8. Factor Completely. (Look for GCF first!)

a) $3x^2 + 24x + 36$ b) $4x^2 - 25$ c) $10x^2 - 45x$

HW: Tan Ch. 5 Review WS

Chapter 5 test tomorrow:

Absolute Value Inequalities

Quadratic Inequalities

Factoring

Exponents

Inverses

Basic Logarithms